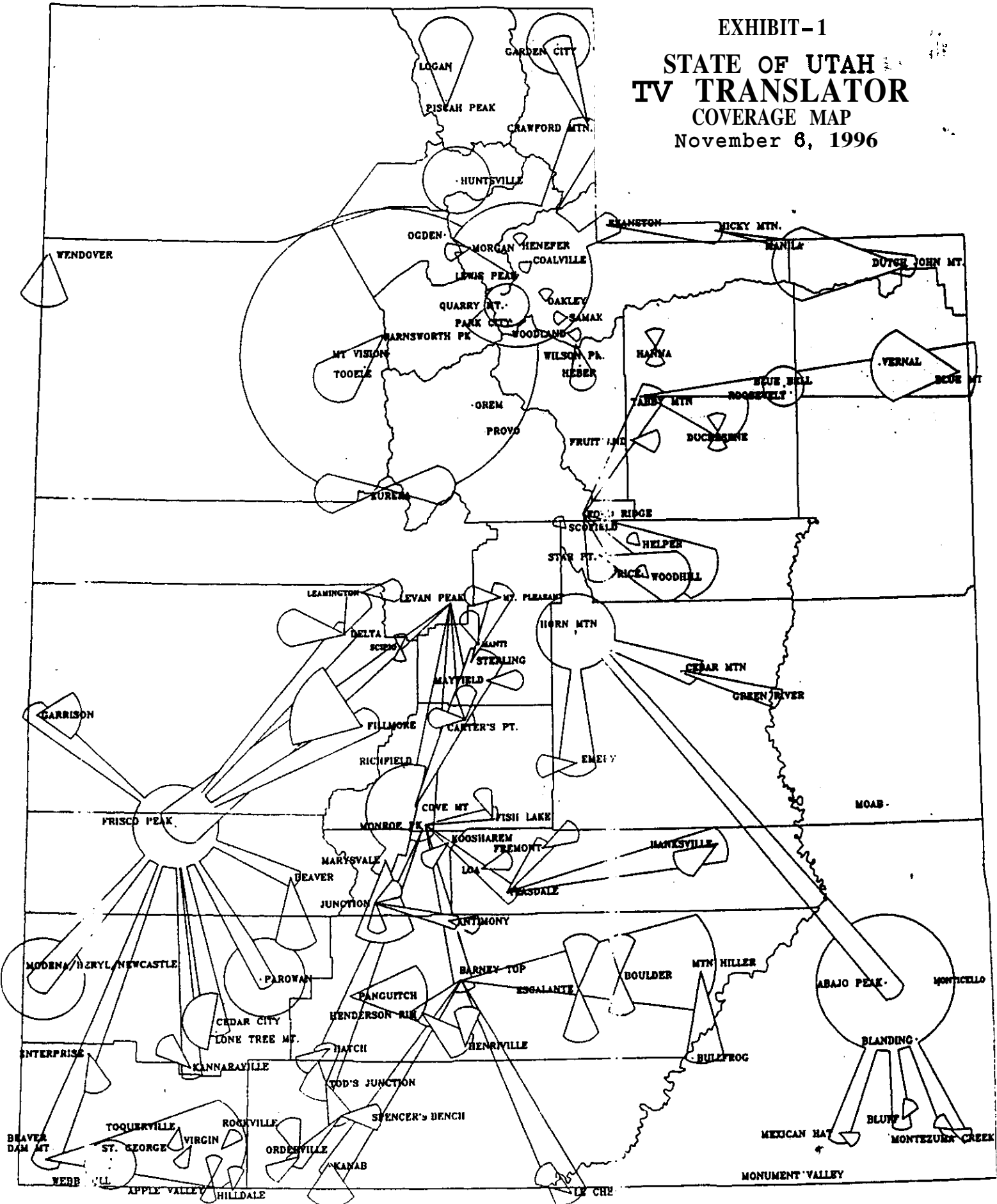


APPENDIX B

State of Utah
TV Translator Coverage **Map**

1996

EXHIBIT-1
STATE OF UTAH
TV TRANSLATOR
COVERAGE MAP
November 6, 1996



CENTRAL

STATE OF UTAH
TV TRANSLATOR MASTER PLAN

SITES RECEIVING DIRECT FEEDS

TOOLE, JUAN WEBER, COACHE, SAN PETER

RED=OUTPUT CHANNEL CHANGE

BLUE=INPUT CHANNEL CHANGE

GREEN=OUT OF STATE

VIOLET=STATION LICENSEE

FEB. 18 2001 REPORT/DOJ

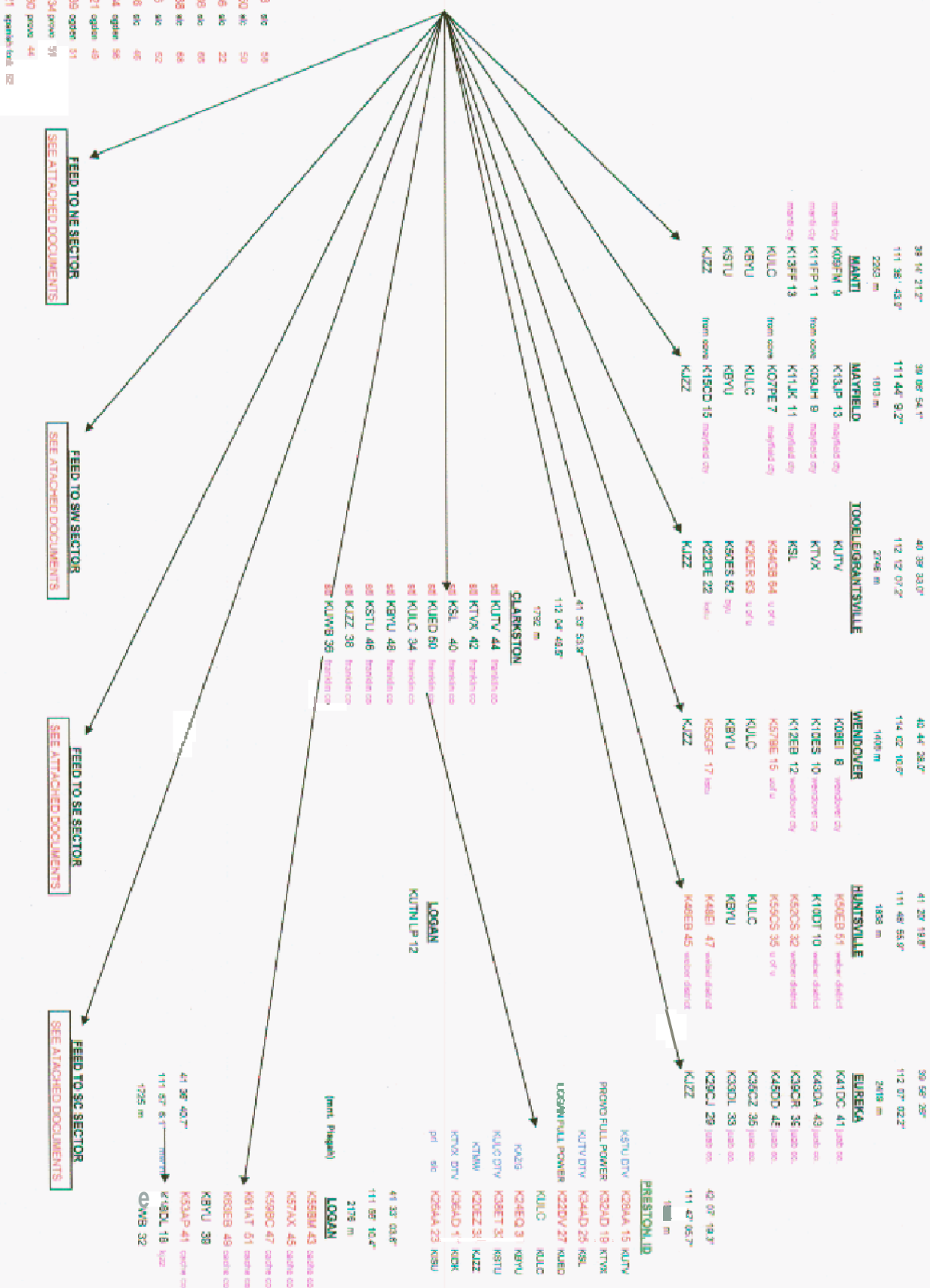
WASATCH FRONT

MT. VISION/FARN SWORTH

- | | |
|----|------|
| 2 | KUTV |
| 4 | KTVX |
| 5 | KSL |
| 7 | KUED |
| 9 | KULC |
| 11 | KBYU |
| 13 | KSTU |
| 14 | KJZZ |
| 30 | KUNB |

WASATCH FRONT TV STATIONS

- | NRSC | DTV | LPTV |
|------|---------------------|--------------------------|
| 2 | KUTV 34 | KUBX 58 <i>nt</i> 58 |
| 4 | KTVX 40 | KABU 50 <i>nt</i> 50 |
| 5 | KSL 38 | KABU 36 <i>nt</i> 22 |
| 7 | KUED 36 | KABN 86 <i>nt</i> 86 |
| 9 | KULC 42 | KBCN 38 <i>nt</i> 48 |
| 11 | KBYU 44 | KUL 26 <i>nt</i> 52 |
| 13 | KSTU 28 | KABU 48 <i>nt</i> 46 |
| 14 | KJZZ 48 | KACU 64 <i>optn</i> 58 |
| 18 | KUPX 29 | KSVN 21 <i>optn</i> 48 |
| 30 | KUAB 46 | KACN 39 <i>optn</i> 31 |
| 24 | KJZZ 34 <i>optn</i> | KACN 34 <i>optn</i> 39 |
| 22 | ? <i>CP Ignn</i> | KBOA 60 <i>provs</i> 44 |
| 20 | KTNW <i>CP nt</i> | KZDY 21 <i>Spanish</i> 8 |



STATE OF UTAH TV TRANSLATOR MASTER PLAN

SOUTH-EAST SECTOR CARBON-EMERY-SAN JUAN

RED=OUTPUT CHANNEL CHANGES
BLUE=INPUT CHANNEL CHANGES
VIOLET=STATION LICENSEE
FEB. 18, 2001 RKP/RT/DCJ

PRIMARY STATIONS →

38 45' 22.8"
110 59' 21.5"
2978 m
(ford ridge)
PRICE/SPRINGGLEN
K84AA 41 kutv
K86AA 45 ksl
K88AX 47 carbon co
K49BO 49 u of a
K29CM 29 u of a
K39CO 39 carbon co
K43CU 43 app carbon co
K21EZ 21 ls. Te kja

ORANGEVILLE (horn mnt.)

K52DS 28 emery co
K54DP 32 emery co
K56EV 24 emery co
K80BU 22 u of a
K15EU 15 app u of a
K52BL 20 emery co
K58EE 18 emery co
K50DI 16 emery co
LP K28EM 28 emery co

PRIMARY STATIONS →

NTSC	DIV
2	KUTV 34
4	KTVX 40
5	KSL 38
7	KUED 36
9	KULC 42
11	KBYU 44
13	KSTU 28
14	KJZZ 48
16	KUPX 29
30	KUWB 48

38 42' 55.5" 38 39' 34.4" 38 41' 6.7" 38 31' 47.2"
111 09' 15.8" 110 48' 38" 110 50' 27.3" 111 09' 4.1"
2803 m 1789 m 1932 m 2894 m
SCOFIELD EAST PRICE HELPER PRICE (star point)
K08CF 8 carbon co K02OT 2 carbon co K11BV 11 carbon co K08AU 8 carbon co
K10CL 10 carbon co K04IW 4 carbon co K13BZ 13 carbon co K10AZ 10 carbon co
K12CE 12 carbon co K09GX 5 carbon co K09BQ 9 carbon co K12AZ 12 carbon co
KUED 7 K07OQ 7 carbon co K07NS 7 carbon co K08DR 6 carbon co
KULC KULC KULC K18OF 18 u of a
KBYU KBYU KBYU KBYU
KSTU KSTU KSTU K35CK 35 ksl
KJZZ KJZZ KJZZ KJZZ application

(AbaJo Peak)

MONTICELLO

K46AF 46 san juan co
K44AG 44 san juan co
K42AD 42 san juan co
K40AF 40 u of a
KULC 47 app u of a
K3BAJ 38 san juan co
K3BAK 36 san juan co
K25FC 45 san juan co
K30DC 30 withers broadcasting

37 19' 11.7" 37 01' 17" 37 15' 38.4" 37 08' 59.4"
108 33' 25.5" 110 48' 68.8" 109 17' 22.5" 109 51' 34.0"
1440 m 1657 m 1422 m 1282 m
BLUFF NAVAHO MTN MONTEZUMA MEXICAN HAT
KUTV 13 KUTV K02OI 2 san juan co KUTV 13
KTVX 11 KTVX KTVX 4 KTVX 11
KSL 9 KSL K05JN 5 san juan co KSL 9
KUED 7 KUED KUED 10 KUED 7
KULC KULC KULC KULC
KBYU K11TF 11 san juan co KBYU 13 KBYU 4
K08MM 8 san juan co K13WH 13 san juan co KSTU 8 KSTU 2
KJZZ KJZZ KJZZ KJZZ

OLJETO

KUTV
KTVX
KSL
KUED
KULC
KBYU
KSTU
KJZZ

(new site)
FERRON

KUTV 9
KTVX
KSL 13
KUED
KULC
KBYU
KSTU
KJZZ 7

(new site)
HUNTINGTON

KUTV 9
KTVX 11
KSL 13
KUED
KULC
KBYU
KSTU
KJZZ 7

38 59' 55.6"

111 11' 26.3"

1928 m

EMERY

K29CY 45 emery co
K31DX 41 emery co
K33OY 49 emery co
K36DV 39 emery co
K27EL 47 emery co
K48EV 43 emery co
K36DW 36 emery co
KJZZ

38 11' 06"

110 36' 16.5"

2357 m

GREENRIVER (cedar mnt.)

K09CX 9 green river city
K11DD 11 green river city
K13DB 13 green river city
K07CV 7 green river city
KULC
K32AJ 36 green river city
K30AG 36 green river city
KJZZ

38 58' 59.8"

110 10' 5.1"

1328 m

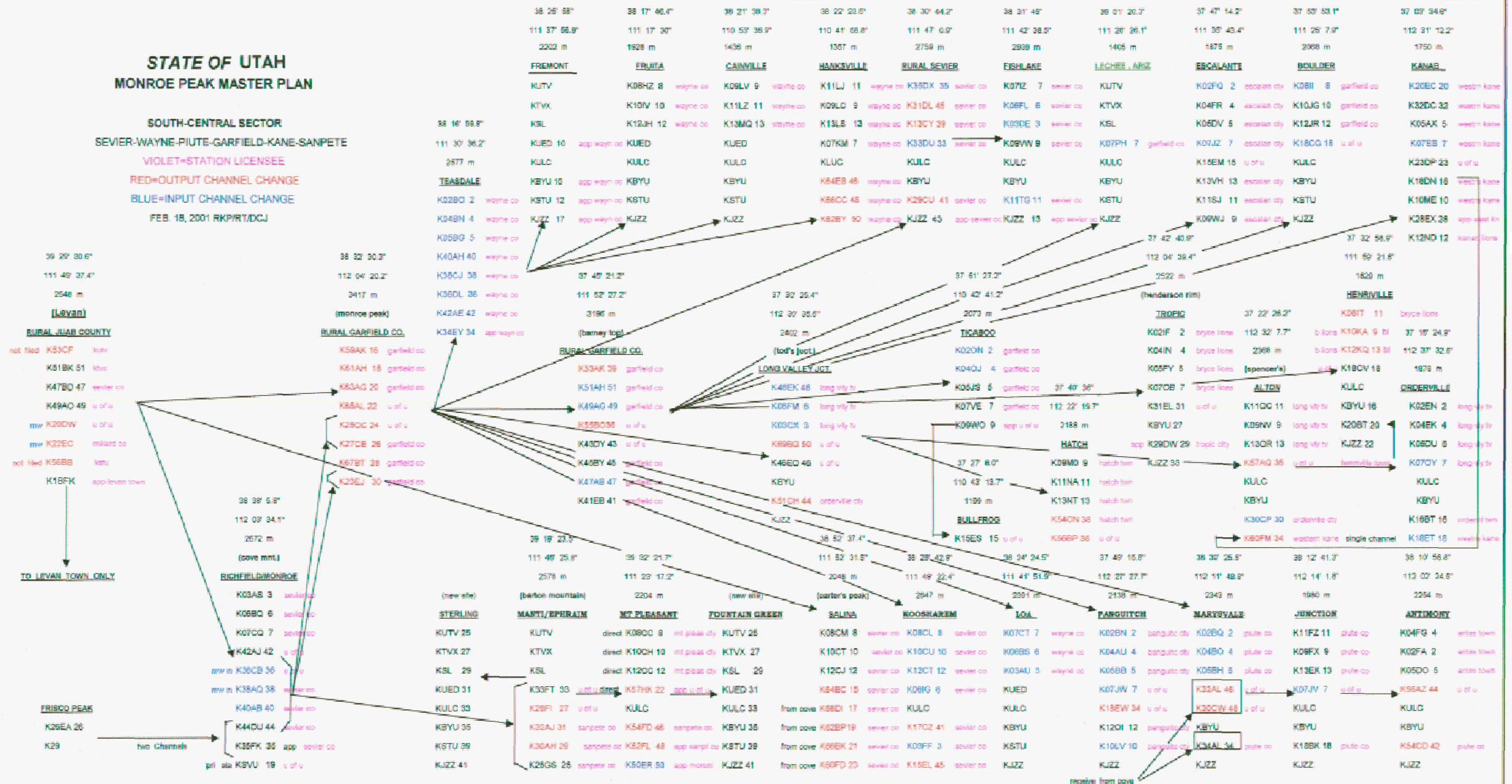
GREENRIVER CITY

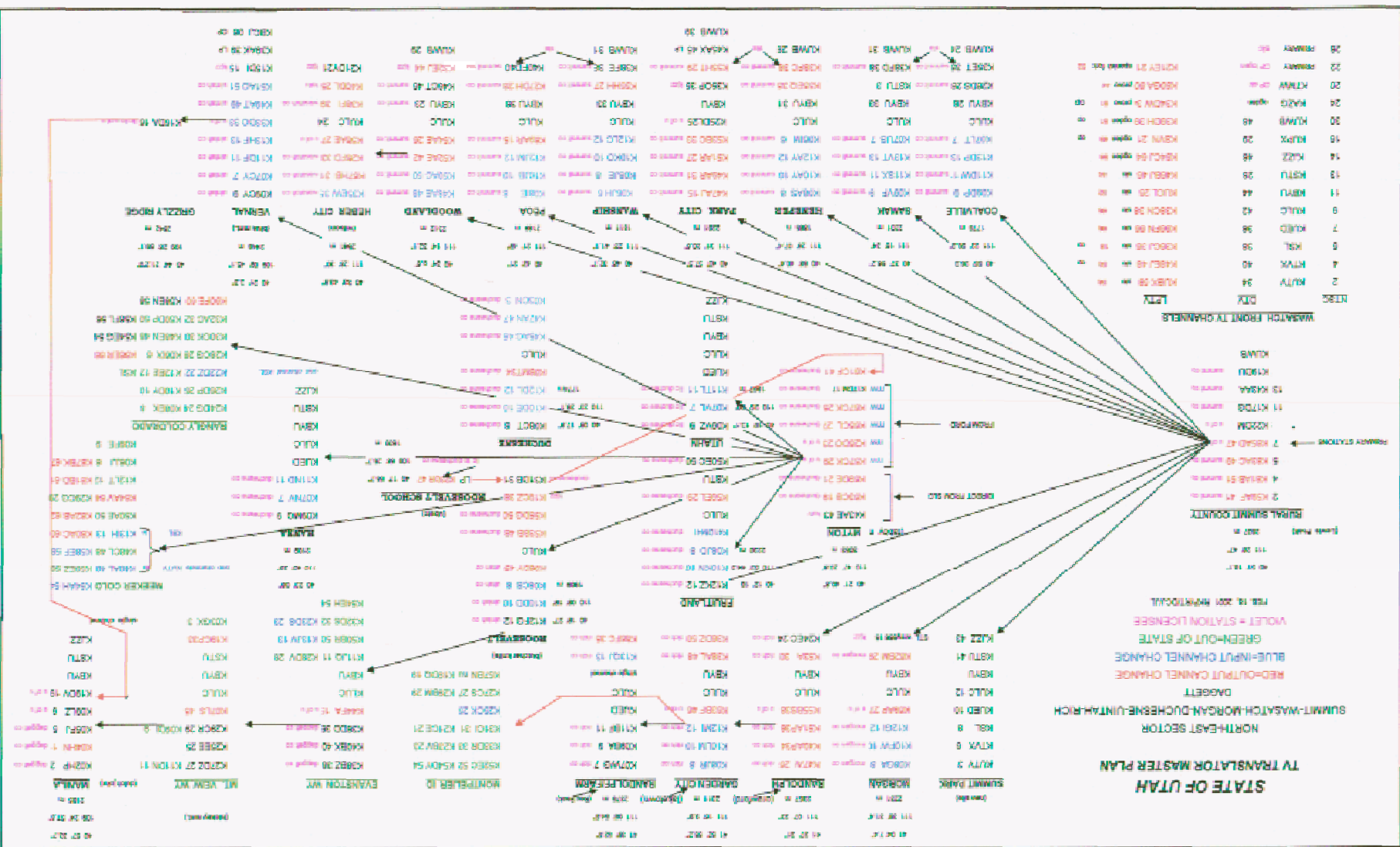
K02BU 2 green river city
K04BR 4 green river city
K05BK 5 green river city
KUED
KULC
KBYU
KSTU
KJZZ

SOUTH-CENTRAL SECTOR
SEVIER-WAYNE-PIUTE-GARFIELD-KANE-SANPETE

BLUE=INPUT CHANNEL CHANGE

FEB. 18, 2001 RKP/RT/DCJ





APPENDIX

C

Summary

Public Roundtable Discussion

Access to
Local Broadcast Television
Signals
In Rural Areas

Summary of Public Roundtable Discussion on Access to Local Broadcast Television Signals in Rural and Small Markets

On March 2, 2000, Gregory L. Rohde, Assistant Secretary of Commerce for Communications and Information and Administrator of the National Telecommunications and Information Administration (NTIA), hosted a public roundtable discussion concerning the technological options for delivering local broadcast signals to communities unlikely to be served by local-into-local service from direct broadcast satellite (DBS) carriers. This roundtable discussion was part of NTIA's inquiry on this issue. Written comments are due by April 14, 2000, and written reply comments are due by May 15, 2000. For details about comment submission procedures, please see the Federal Register, Vol 65, No 30, February 14, 2000, at 7362.

The roundtable featured a wide variety of technological approaches to delivering local-into-local television signals to rural and small markets. Roundtable participants considered satellite broadcasting, terrestrial broadcasting, Internet video streaming, multichannel multipoint distribution service (MMDS), and other fixed wireless options. Rep. Robert Goodlatte (R-Va.) and Rep. Rick Boucher (D-Va.) opened the discussion. Christopher McLean, Acting Administrator, Rural Utilities Service (RUS) of the U.S. Agriculture Department, joined Rohde in questioning the roundtable participants.

The participants were Rajiv Bahtia, Chief Technology Officer, TVontheWeb; Joel Brick, Technical Director, Sioux Valley Wireless; James M. Carey, Senior Vice President, Operations, Mediacom Communications Corporation; Sophia Collier, President, Broadwave USA; Eileen Galoostian, Vice President for Technology, streampipe.com; Dennis Haarsager, Associate Vice President & General Manager, public television stations KWSU-TV, (Pullman, WA) and KTNW-TV, (Richland, WA) and chairperson of the Public Broadcasting Service New Technologies Committee; Walter E. Kemmerer, President, Pine Tree Cablevision; Ralph M. Oakley, Vice President, Quincy Newspapers, Inc. and Chief Operating officer, Quincy Newspapers, Inc. / Broadcast Division; Marshall W. Pagon, Chairman, President, and Chief Executive Officer, Pegasus Communications; Bob Phillips, President and Chief Executive Officer, National Rural Telecommunications Cooperative; and Charles E. Sherman, Executive Vice President of Television, National Association of Broadcasters

A summary of the roundtable discussion and public question and comment period is presented below.

Opening Remarks from Goodlatte and Boucher

At the beginning of the session, Goodlatte and Boucher explained the policy framework of their co-sponsored legislation to facilitate local-into-local service for rural areas. They said that their bill, The Rural Local Broadcast Signal Act, (H.R. 3615) is a technologically neutral loan guarantee program. H.R. 3615 designates RUS to administer the loan guarantee program.

The congressmen each represent districts in southwestern Virginia, which is a mountainous region comprised of small television markets. Goodlatte explained that commercial DBS companies will not carry any local station in his congressional district. He displayed a United States map that designated markets slated to receive local-into-local service, all of which were major television markets. Boucher observed that half of the cities in his district do not even have affiliates of the three major TV networks. He said that virtually all rural areas will be shut out from local-into-local service.

Video Streaming

The roundtable participants explored the viability of sending local television programming to households

via the Internet. Galoostian stated that the Internet can now distribute video through standard phone lines. If viewers connect to the Internet through a home computer, broadcasters can also develop interactive television options, according to Galoostian. She noted that video signal quality on the Internet today does not match broadcast television. Galoostian told the roundtable participants that the Internet can "stream" video at 10 to 12 frames **per** second, compared to the 33 frames **per** second rate for conventional broadcast distribution. Bahtia added that the Internet can stream video today at 20 frames per second. Signal quality loss is most problematic for action-intensive programs, such as sports events. This deficiency does not stop some broadcasters. At Quincy Broadcasting Company, Oakley offers video streaming as an adjunct to traditional over-the-air service. The company's KTTC-TV (Rochester, Minnesota), WGEM-TV (Quincy, Illinois), and WVVA-TV (Bluefield, West Virginia) stream all or some of their respective daily news programs. This is evidence that video streaming of broadcast stations **can** now reach small markets. WGEM-TV (Quincy, Illinois), KTTC-TV (Rochester, Minnesota), and WVVA-TV (Bluefield, West Virginia) are in the 148th, 153rd, and 160th ranked markets, respectively.

Bahtia echoed Galoostian's point that video Streaming offers an opportunity for broadcasters to reach households that have a phone line and a computer. He emphasized that the video streaming **infrastructure** is coming into place. Almost every household has a telephone and the number of households with computers is growing daily, according to Bahtia. He argued that video streaming is a solution today both for people who do not subscribe to cable and for local stations that are not carried by satellite services. Sherman pointed out that broadcasters are nevertheless concerned about the quality of the broadcast signal presented to viewers. Copyright issues are also important. Bahtia and Galoostian explained that current password protection software can prevent copyright violations.

Fixed Wireless Technology

Multichannel multipoint distribution service (MMDS) technology is a successful way to re-transmit local broadcast signals to underserved and unserved ~~areas~~, according to Brick. Sioux Valley Wireless has nearly 6,500 subscribers to its television service delivered by microwave. Its customers live in small markets throughout South Dakota, Iowa, Nebraska, and Minnesota. The company has a viable rural television business despite an average population density of just two people per **square** mile in its service area. System upgrades now permit Sioux Valley Wireless to provide customers with continuous connection to the Internet. The company is in the early stages of its Internet business development. Sioux Valley Wireless now has 150 two-way wireless Internet subscribers. Brick advocated that any federal loan guarantee program be technologically neutral.

Broadwave USA, Inc. is a network of 68 ~~affiliates~~ entities that proposes to retransmit local television broadcast signals in every market through a fixed microwave application developed by Northpoint Technology. Collier explained that this service would operate on the 12.2-12.7 GHz band concurrent with the incumbent direct broadcast satellite (DBS) service. Consumers could use the same reception dishes now used for DBS, according to Collier. Broadwave also proposes to provide additional video and Internet services. Pagon **and** Collier shared their different viewpoints **about** the **technical** viability of Broadwave's proposal to share bandwidth with DBS **services**.

Satellite

The National **Rural** Telecommunications Cooperative (NRTC) and Pegasus Communications Corporation (Pegasus) **are** two businesses focused on *rural* delivery of DBS **service**. NRTC, in partnership with DIRECTV, Inc. and Thomson Consumer Electronics, delivers DBS service to more than 1 million **rural** customers. Pegasus provides DBS service to approximately 1.1 million subscribers in 41 states. Pegasus also owns or programs ten television stations **serving** 2 million households in ten states.

For rural **areas**, satellite technology is superior to cable, Phillips told the roundtable participants. He argued that satellite broadcasting infrastructure provides ubiquitous coverage over a large geographic area for less money than the cost of a cable plant. Although the Satellite Home Viewer Improvement Act of 1999 now permits satellite carriers to deliver local broadcast signals to their subscribers, Phillips observed that many rural communities will not receive local signals. He explained that this is because there is now insufficient satellite capacity and no economic incentive to add capacity. Phillips said that the government must allocate more spectrum to direct broadcast satellite service and provide loan guarantees that make it economically viable for satellite operators to deliver local television signals to unserved and underserved communities.

In particular, Phillips expressed support for the federal loan guarantee ~~proposal~~ found in H.R. 3615. McLean explained that RUS has never lost money on a telecommunications loan guarantee and has made telecommunications loans for fifty **years**. The agency now administers approximately \$4 billion annually for telephony, water, and electrification projects. McLean noted that the ability for Americans in **rural areas** to enjoy many technological options for the reception of local television signals depends on legislative language that states clearly that all technological approaches **are** eligible for the loan guarantee. For example, McLean explained that H.R. 3615 would remove a statutory prohibition on RUS loan guarantees to cable.

Pagon told the roundtable participants ~~that~~ while it is true that satellite platforms have limited unused transponder capacity operated at the current orbital location (101' and 119'). There **are** no technological, legal, or economic reasons why local television via satellite serve cannot be transmitted from satellites owned or operated by satellite carriers who do not presently provide a direct-to-home satellite service. According to Pagon, there is "substantial transponder capacity on satellites currently in orbit owned by other satellite carriers that is unused." Pagon added that **as** so-called "spot beam" satellites **are** launched to replace or supplement existing satellites over the next few years, "existing satellite bandwidth will more than quintuple through frequency **re-use** enabled by these "spot beams."

Pagon told the roundtable that the economic feasibility of local-into-local for a specific market is not determined by the number of television households in the market (i.e., market size), but "by the relationship between the **cost** of the satellite bandwidth required and the economic **return** from providing local television via satellite. Pagon explained that the cost of bandwidth required is a function of the number of stations re-transmitted in a market, the number of stations that can be transmitted over one transponder, and the cost of a satellite transponder. The economic **return** for providing local-into-local service is determined by the number of satellite subscribers in the **particular market** and the monthly fee for the local-into-local service. Pagon pointed out that in small **markets** satellite penetration (i.e., the ratio of satellite subscribers to total homes) is almost five times higher than in larger markets. Pagon offered the following example: There **are** almost 100,000 satellite subscribers in Vermont, a market of approximately 300,000 television households. This penetration rate exceeds the satellite subscription rate in many of the top **25** television **markets** where there **are** more than one million television households in each market. Pagon added ~~that~~ in smaller markets there **are** fewer local stations to re-transmit. "Put simply, the cost of bandwidth is lower in small markets (i.e., fewer stations per market) and the **actual** market is in many instances **equal** to or **greater** than large markets (i.e., high satellite penetration **offsets** smaller total households).

Cable technology **offers** another option for rural and small markets to receive local broadcast signals. For example, Mediacom Communications Corporation delivers state-of-the-art cable video and **data services**

to rural and small communities. Carey said that the company's strategy is to cluster principally non-metropolitan cable markets. Mediacom operates cable systems in **21** states and serves nearly 1000 communities. The company's system sizes range from **50** to **30,000** subscribers. Over the past two years, Mediacom rebuilt **7500** miles of cable plant in order to provide digital video and high **speed** Internet access.

Kemmerer added that Pine Tree Cablevision's Maine operation grew from three head-ends that served less than 1,000 subscribers in 1981 to **5,500** subscribers served by seven head-ends in 1999. The company now serves 26 total communities in Maine where three headends are connected with fiber and offer digital video and high speed Internet access to 15 of the 26 communities. Over the next two years, Pine Tree Cablevision is preparing to connect its four other Maine headends with fiber optic cable. Pine Tree Cablevision also serves small and *rural* markets in New Hampshire and South Carolina where the company is presently designing fiber optic cable interconnects in four headends in New Hampshire and **12** headends in South Carolina. These headends are scheduled for construction in **2001**. Kemmerer emphasized that expanded channel capacity and advanced telecommunications **services are** now reaching **rural areas** via cable.

Carey explained that a lot of money is invested in small and *rural* communities to build out access to additional channel capacity and advanced services. He **stated** that cable now passes **97** percent of the television households nationwide. Carey said that government-subsidized **service** could jeopardize small cable operators that must compete for capital, added he is concerned that any government initiative not **undermine** these investments. Carey said he does not want the government to pick technological winners and losers in its effort to expand local television service to unserved and underserved **areas**. Boucher responded that the **government** has traditionally played a role in bringing services, like telephone services, to **rural** areas.

Terrestrial Broadcasting

The broadcasting industry will consider any technology that extends the reach of its signal to unserved areas according to **Sherman**. Sherman said that his greatest concerns **are** that the broadcast signal quality is not compromised by the transmission media used to extend service and that there is compliance with the copyright laws. He also argued that consumers want an **ease** of use that may be difficult to achieve if TV signals come from sources **as** different **as** video streaming and satellite.

Haarsager observed that one technology cannot be relied upon to deliver broadcast signals to **rural** viewers. He now pursues IP-based opportunities for the two **rural area** public television **stations** that he manages. Haarsager explained that he is "pessimistic" that either **free** over-the-air digital television or DBS will enter these communities. According to Haarsager, given the current state of the law there will be few **rural** public television stations carried by DBS services.

During the public comment period, translator technology was proposed by George Borsari, general counsel of the National Translators Association (NTA). According to NTA, translators **are** the only viable means to provide free over-the-air television **service** to unserved and underserved **markets** at this time. Translators, however, are designated **as** a **secondary** service by the Federal Communications Commission. Borsari said that the nearly 6000 translators **that** provide service to rural communities **are** threatened by demands from other services that have precedence if there is interference. **Borsari** urged greater regulatory protection for translators.

Concluding Remarks

Rohde concluded the discussion by encouraging roundtable members and the general public to participate in NTIA's formal comment process concerning local-into-local service for unserved and undersewed communities. He explained that NTIA will use the comment information to develop policy positions on the local-into-local service to small and rural markets.

CERTIFICATE OF SERVICE

I, Jennifer A. White, do hereby certify that a copy of the foregoing PETITION
FOR RULE **MAKING** has been sent, via hand delivery, this 6th day of November, 2002,
to:

The Honorable Michael K. Powell
Chairman
Federal Communications Commission
The Portals II, Room 8-B201
445 Twelfth Street, S.W.
Washington, D.C. 20554

The Honorable Kathleen O. Abernathy
Commissioner
Federal Communications Commission
The Portals II, Room 8-8115
445 Twelfth Street, S.W.
Washington, D.C. 20554

The Honorable Michael J. Copps
Commissioner
Federal Communications Commission
The Portals II, Room 8-A302
445 Twelfth Street, S.W.
Washington, D.C. 20554

The Honorable Kevin J. Martin
Commissioner
Federal Communications Commission
The Portals II, Room 8-A204
445 Twelfth Street, S.W.
Washington, D.C. 20554

W. Kenneth Ferree, **Esq.**
Chief, Media Bureau
Federal Communications Commission
The Portals II, Room 3-C740
445 Twelfth Street, S.W.
Washington, D.C. 20554

Barbara A. Kreisman
Chief, Video Division
Media Bureau
Federal Communications Commission
The Portals II, Room **2-8616**
445 Twelfth Street, S.W.

Washington, D.C. 20554

Roy Stewart
Chief, Office of Broadcast Elections Policy
Media Bureau
Federal Communications Commission
The Portals II, Room 2-C347
445 Twelfth Street, S.W.
Washington, D.C. 20554

Keith Larson
Chief Engineer, Media Bureau
Federal Communications Commission
The Portals II, Room 2-C420
445 Twelfth Street, S.W.
Washington, D.C. 20554

Hossein Hashemzadeh
Associate Chief, Video Division
Media Bureau
Federal Communications Commission
The Portals II, Room 2-C866
445 Twelfth Street, S.W.
Washington, D.C. 20554



Jennifer A. White